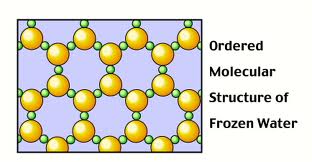
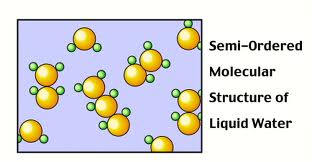
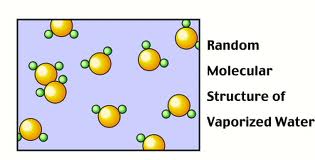
**Physical & Chemical changes**

When heat is introduced to various substances (eg in the kitchen) two types of reactions can occur. These are either physical changes or chemical changes.

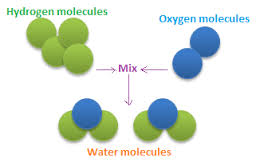
Physical changes are ones that can change the structure of a substance, but will still be that substance; eg Ice – water – steam. Steam can be changed back into water and ice. Most physical changes are able to be reversed.

Chemical changes are when one substance is altered (by heat or introduction of another substance) to become something else. For example, if a raw egg is heated, a chemical reaction takes place to change it into another substance (harder) which is them unable to change back into a raw egg. Most chemical changes are not reversible.

**Diagram 1 – physical changes at a particle level**

**Diagram 2 – chemical changes at a particle level of the composition/formation of water**



Please click on link below – simulation of the chemical reaction to create water

<http://www.visionlearning.com/en/library/Chemistry/1/Chemical-Equations/56>

**Physical & chemical changes table**

|  |  |  |
| --- | --- | --- |
| **Substance heated** | **Physical** | **Chemical** |
| Ice – water - steam | yes |  |
| Egg boiled |  | yes |
| Bread burnt (toast) |  | yes |
| Butter melted | yes |  |
|  |  |  |
|  |  |  |

Please think of two more things from the kitchen and work out if they go through a physical or chemical change when heated.

***Pedagogy***

In the classroom, these concepts are best taught through exploration and experimentation. Using narrative based approach (this morning when I cracked an egg into the pan, I noticed that…….., can anyone tell me why this happened etc). By seeing and testing the concepts in a meaningful way, children are able to interact and relate with the information to build meaningful knowledge.

Please check out some interactive websites I have found that may help children grasp these concepts.

**Cooking simulator**

<http://www.youtube.com/watch?v=8QRSIu1ReXY>

**Clip on - difference between physical and chemical change**

<http://www.youtube.com/watch?v=hcunQqbNEMQ>

**Kitchen chemistry simulation**

<http://www.scootle.edu.au/ec/viewing/L2365/index.html>

**Skool – particle theory - interactive**

<http://lrrpublic.cli.det.nsw.edu.au/lrrSecure/Sites/Web/skoool/chem/step/particle_theory/index.html>

**Chemical reaction flow chart**

<http://www.education.vic.gov.au/Documents/school/teachers/teachingresources/discipline/science/continuum/chemreac2.pdf>